

CUSTOMER _____

CUSTOMER'S P/N _____

DESCRIPTION _____ SMD POWER INDUCTOR _____

SGTE PART NO. _____ GPSR0550-220M _____

SAMPLE NO. S14053001 REVISION NO. A DATE 2014-5-30

SPECIFICATION FOR APPROVAL

FULLY APPROVED	REVISE APPROVED

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SPECIFICATION

**RoHS
COMPLIANT**

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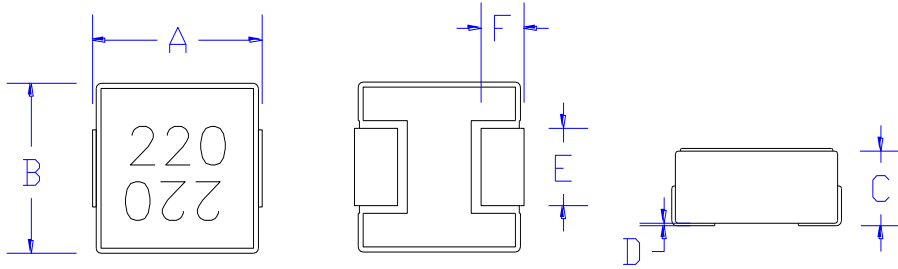
APPROVED BY	CHECKED BY	DRAWING BY
<i>Tianyi</i> 5/30	<i>Zhang</i> 5/30	<i>Li</i> 5/30

SPECIFICATION

**RoHS
COMPLIANT**

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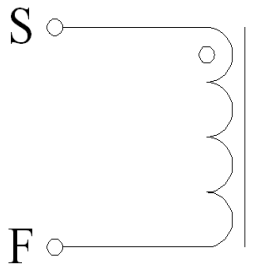
External Dimensions Unit (mm)



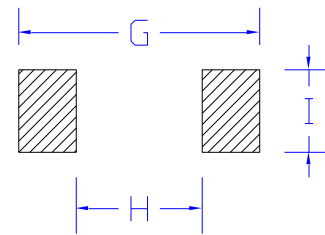
A	5.6±0.3
B	5.1±0.3
C	5.0Max
D	≤0.15
E	2.0±0.5
F	1.0±0.5
G	7.0 REF
H	3.0 REF
I	2.5 REF

Coating: uncolored

Connection



Recommended Land Pattern



Electrical Specification

Measurement Item	Unit Tolerance	Specification	Test Frequency	Test Instrument
L	uH (±20%)	22uH ± 20%	100KHz/1V	LCR Meter Agilent/4284A or Chroma /11300
DCR	mΩ	238mΩ (Max)		Chroma /16502
I rms	Amps	1.5A	100KHz/1V	LCR Meter Agilent/4284A+42841A
I sat	Amps	2.5A	100KHz/1V	or Chroma /11300+3302+1320+1320S

- I rms: Current that causes a 40°C temperature rise from 25°C ambient.
- I sat: DC current at which the inductance drops 35% from it's value without current.
- All test Data is referenced to 25°C ambient.
- Operating Temperature Range: -25°C to +125°C

TEST REPORT

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Electrical Characteristic

Item	LOA	DCR	I rms	I sat
Specification	22uH	238mΩ	1.5Amps	2.5Amps
Tolerance	±20%	Max	$\Delta T \leq 40^{\circ}\text{C}$	$L \geq 65\%$
1	21.38	181.11	13.8°C	71.7%
2	20.83	183.39		
3	20.07	183.90		
4	20.53	182.60		
5	20.77	182.33		
6	20.26	184.02		
7	19.95	184.11		
8	21.20	183.32		
9	20.89	184.59		
10	21.14	184.34		
\bar{X}	20.70	183.37		
σ	0.46	1.02		

External Dimensions

Item	A	B	C	D	E	F
Specification	5.6	5.1	5.0		2.0	1.0
Tolerance	±0.3	±0.3	Max	≤0.15	±0.5	±0.5
1	5.62	5.26	3.62	0.07	2.05	1.26
2	5.68	5.34	3.60	0.10	2.07	1.05
3	5.59	5.16	3.67	0.09	2.06	1.07
4	5.62	5.28	3.62	0.06	2.05	1.28
5	5.66	5.31	3.58	0.08	2.04	1.04
6	5.71	5.16	3.64	0.07	2.06	1.14
7	5.68	5.22	3.55	0.09	2.06	1.20
8	5.64	5.28	3.57	0.12	2.05	1.08
9	5.73	5.13	3.59	0.08	2.03	1.11
10	5.67	5.24	3.62	0.09	2.02	1.05
\bar{X}	5.66	5.24	3.61	0.09	2.05	1.13
σ	0.04	0.07	0.03	0.02	0.01	0.08

Inductance measured at 100KHz/1Vrms.

Electrical specifications at 25±5°C. Humidity 60±10%

ELECTRICAL CHARACTERISTICS

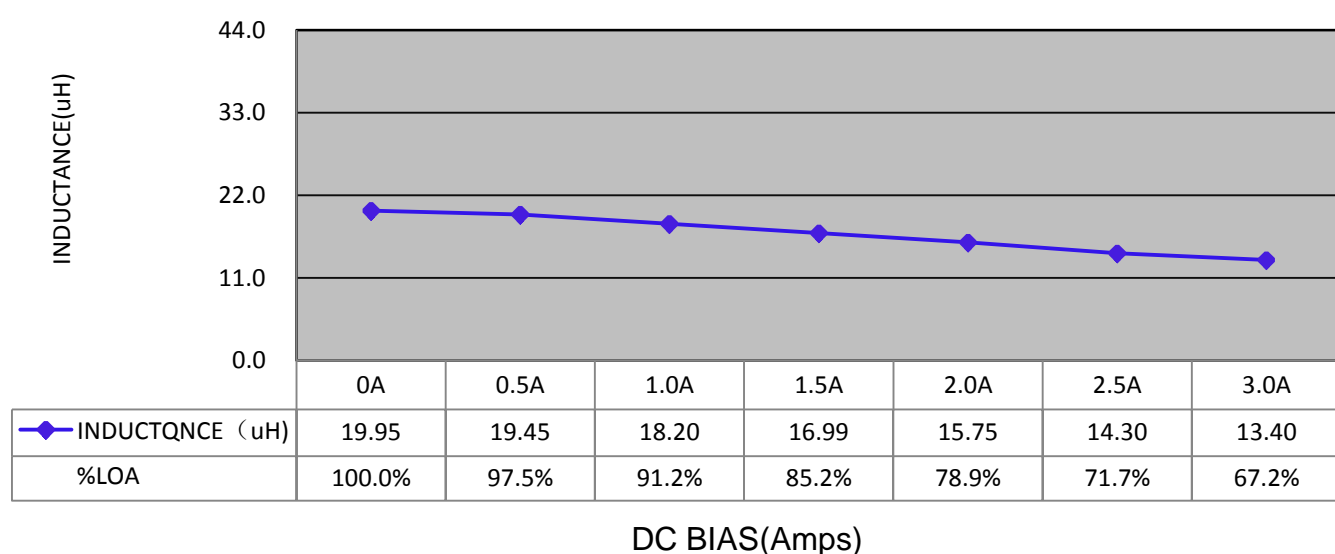
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Inductance VS DC current

IDC	L	%LOA				
0A	19.95	100.0%				
0.5A	19.45	97.5%				
1.0A	18.20	91.2%				
1.5A	16.99	85.2%				
2.0A	15.75	78.9%				
2.5A	14.30	71.7%				
3.0A	13.40	67.2%				

CONDITION: 100KHz/1.0Vrms AMBIENT: 20°C, 69.8%



ELECTRICAL CHARACTERISTICS

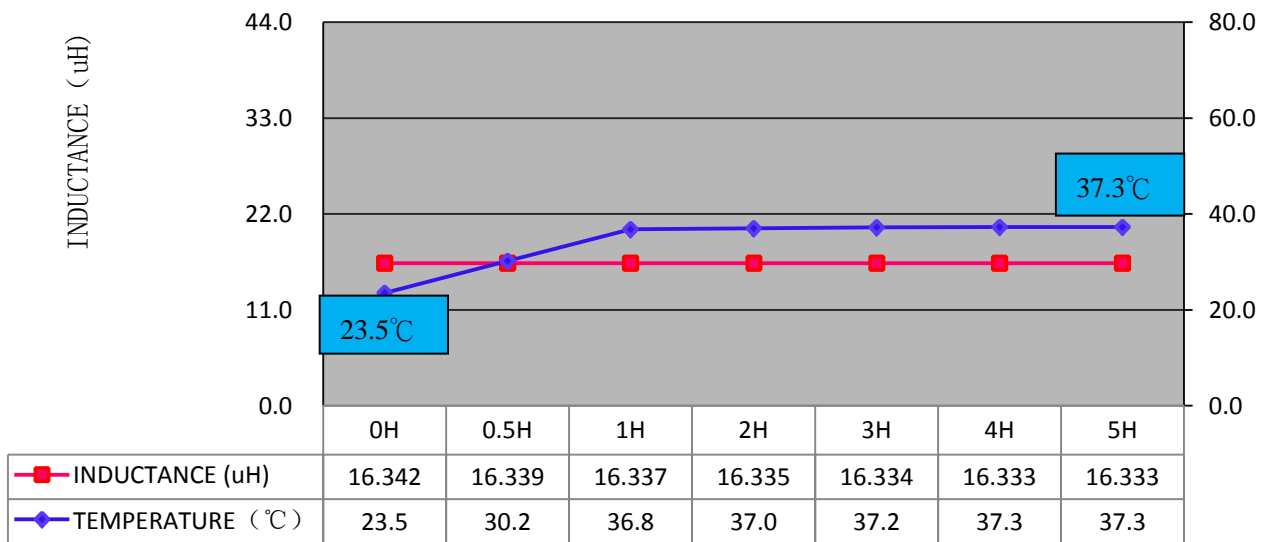
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DC current VS Temperature

Time	L (μ H)	T (°C)	ΔT(°C)			
0H	16.342	23.5				
0.5H	16.339	30.2	6.7			
1H	16.337	36.8	13.3			
2H	16.335	37.0	13.5			
3H	16.334	37.2	13.7			
4H	16.333	37.3	13.8			
5H	16.333	37.3	13.8			

CONDITION: Load 1.5A AMBIENT: 20°C, 69.8%



Inductance VS Temperature

ELECTRICAL CHARACTERISTICS

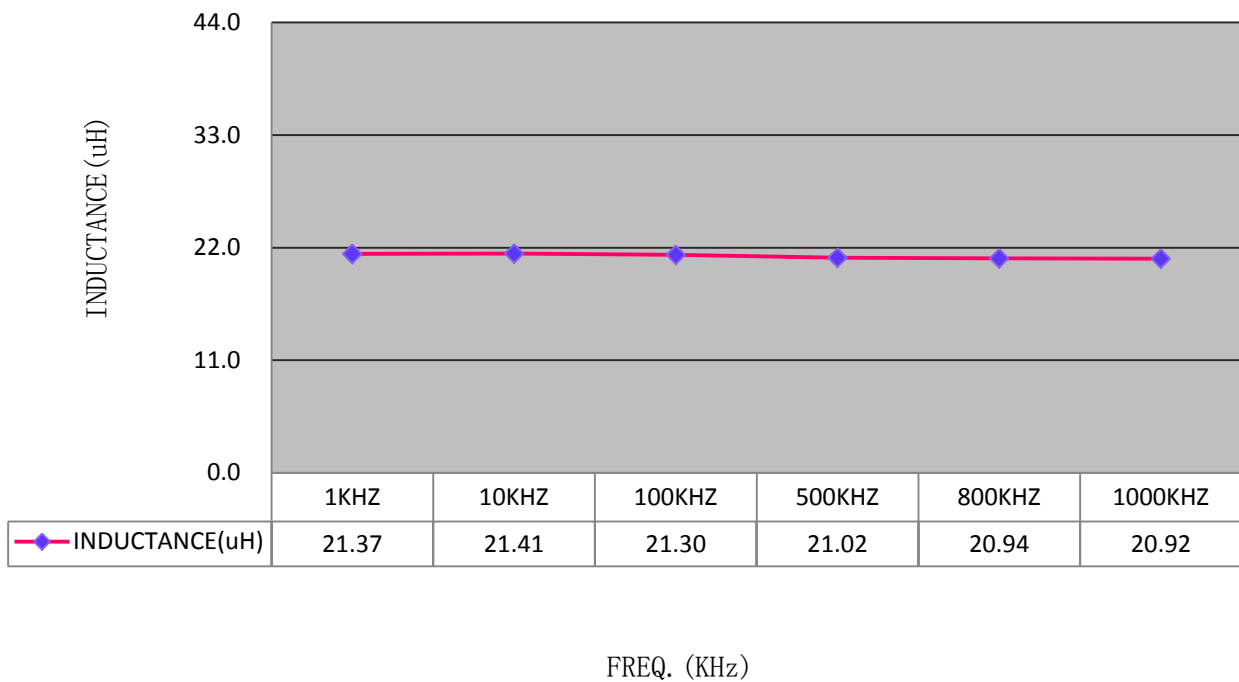
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Inductance VS Frequency

FREQ.	L (μ H)					
1KHZ	21.37					
10KHZ	21.41					
100KHZ	21.30					
500KHZ	21.02					
800KHZ	20.94					
1000KHZ	20.92					

AMBIENT: 20°C, 69.8%

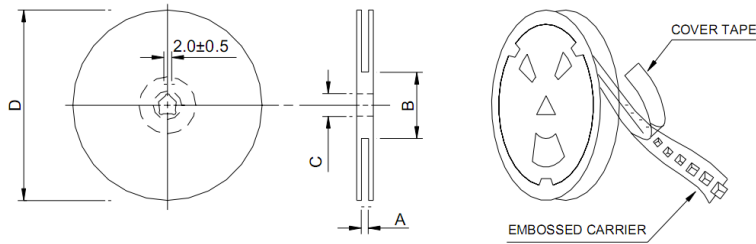


PACKING FOR SPECIFICATION

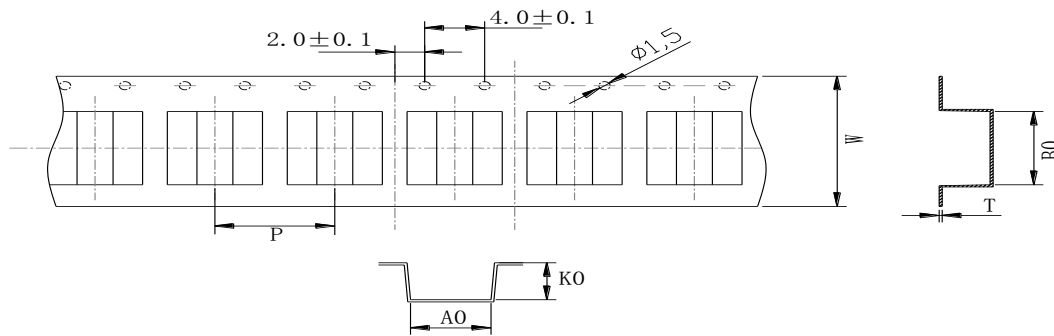
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Packaging Information:



TYPE	A(mm)	B(mm)	C(mm)	D(mm)
13 [±] *12mm	12.0±0.5	100±2	13.5±0.5	330

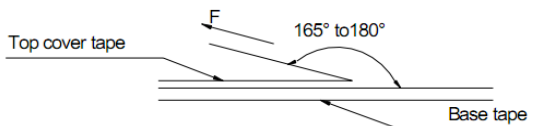


TYPE	Ao	Bo	Ko	F	t	W	P
GPSR0550	5.6±0.1	6.15±0.1	5.35±0.1	5.5±0.1	0.4±0.05	12.0±0.3	8.0±0.1

Taping Quantity:

SERIES	GPSR0550
PCS/Reel	1500

Tearing Off Force



The force for tearing off cover tape is 15 to 60 grams in the arrow direction under the following conditions.

Room Temp. (°C)	Room Humidity (%)	Room atm (hPa)	Tearing Speed mm/min
5~35	45~85	860~1060	300

Application Notice

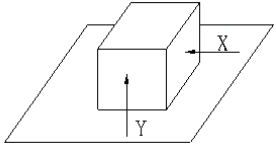
- Storage Conditions
 - To maintain the solderability of terminal electrodes:
 1. Temperature and humidity conditions: Less than 30°C and 70% RH.
 2. Recommended products should be used within 6 months from the time of delivery.
 3. The packaging material should be kept where no chlorine or sulfur exists in the air.
- Transportation
 - 1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
 - 2. The use of tweezers or vacuum pick up is strongly recommended for individual components.
 - 3. Bulk handling should ensure that abrasion and mechanical shock are minimized.

GENGRAL CHARACTERISTICS

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.STORAGE TEMPERATURE :	25°C~30°C HUMIDITY 45~85% RH
2.OPERATING TEMPERATURE RANGE :	-30°C ~+125°C (CONTAIN HEATING COIL)
3.EXTERNAL APPEARANCE :	NO EXTERNAL DEFECTS CAN BE FOUND IN THE VISUAL INSPECTION.
4. TERMINAL STRENGTH :	NO TERMINAL DETACHMENT SHOULD BE FOUND WHEN THE DEVICE IS PUSHED IN TWO DIRECTIONS OF X AND Y WITH THE FORCE OF 10.0N FOR 10±2 SECONDS AFTER SOLDERING BETWEEN COPPER PLATE AND THE TERMINALS.(REFER TO FIGURE AT RIGHT) 
5.HEAT ENDURANCE TEST :	REFER TO <u>Recommended Soldering Temperature Graph</u> . (AT PAGE 2) .
6.INSULATING RESISTANCE :	THE INSULATION RESISTANCE SHOULD BE OVER 100MΩ WHEN D.C.100V IS APPLIED TO THE WINDING –CORE. MEANWHILE NO STRUCTURE AND ELECTRIC DEFECTS SHOULD BE FOUND FOR 1 MINUTE.
7. TEMPERATURE FEATURE :	INDUCTANCE COEFFICIENT IS $(0\sim 2000)\times 10^{-6}(-25\sim +85^{\circ}\text{C})$
8. HUMIDITY TEST :	INDUCTANCE DEVIATION IS WITHIN ±5.0% AND NO STRUCTURE AND ELECTRIC DEFECTS CAN BE FOUND AFTER 96 HOURS TEST UNDER THE CONDITION OF RELATIVE HUMIDITY OF 90~95% AND TEMPERATURE OF 40±2°C. AND 1 HOUR STORAGE UNDER ROOM AMBIENT CONDITIONS AFTER THE DEVICE IS WIPED WITH DRY CLOTH.
9. VIBRATION TEST :	INDUCTANCE DEVIATION IS WITHIN ±5.0% AFTER 1 HOUR SWEEPING VIBRATION IN EACH THREE DIRECTIONS. NAMELY, FREQUENCY IS 10~55~10Hz AND THE AMPLITUDE OF 1MINUTE CYCLE IS 1.5m PP.
10.SHOCK TEST :	INDUCTANCE DEVIATION IS WITHIN ±5.0% AFTER THE TEST WITH GOM-BLOCK SHOCK TESTING MACHINE, ONCE IN EACH OF THE THREE PERPENDICULAR AXIS DIRECTIONS. THE SHOCK ACCELERATION IS 981m/s ² .

THE CONDITION OF REFLOW

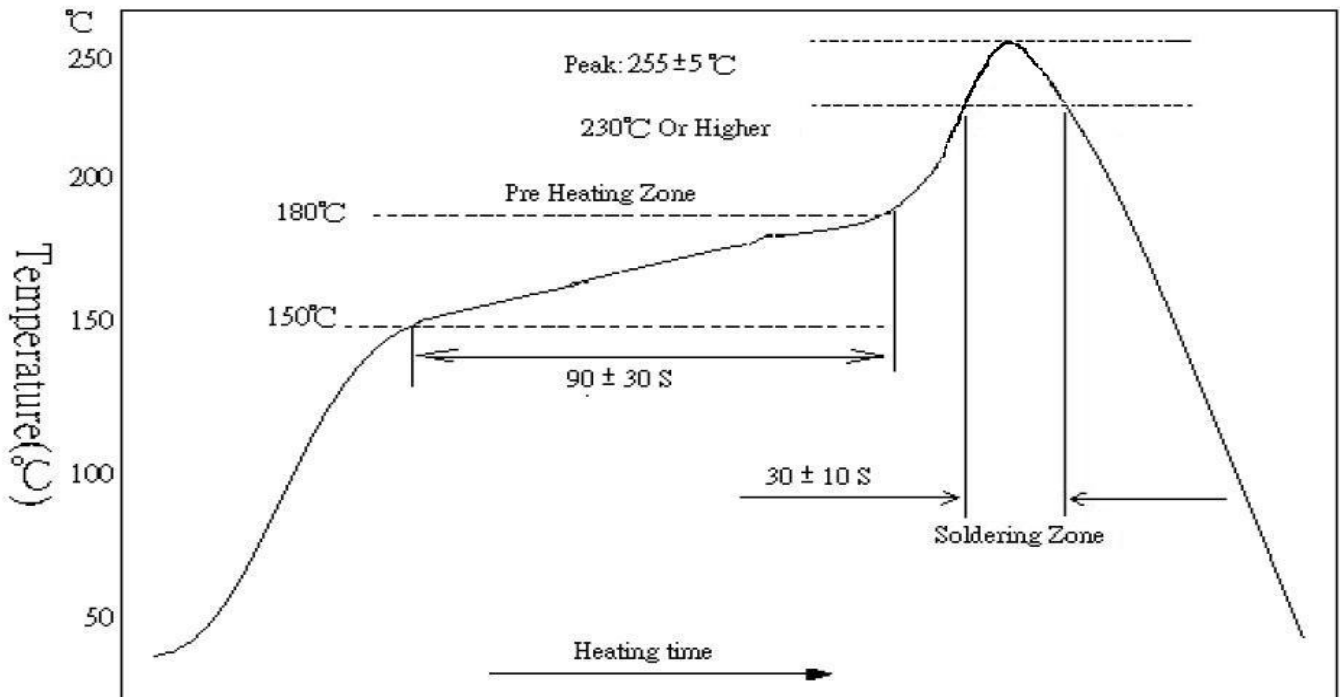
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Reflow Soldering



Hand soldering

